SPECIAL REPORT

Dirty Power?

Legislation would require two local coal-burning power plants to reduce harmful emissions.

By Brian McNeill
The Connection

Residents living in Old Town Alexandria started noticing a few years ago that a thin film of grimy gray dust was sticking to their windows and coating surfaces inside their homes.

The source of the dust, they came to realize, was the nearby Potomac River Generating Station, a coal-burning power plant in Old Town nestled in a residential neighborhood amidst rowhouses and high-rise apartment buildings.

"This dust was constant," said Paul Smedberg, an Alexandria City Council Member. "It got really bad. It was getting inside our homes. It was really pretty shocking."

Smedberg and others knew that while the gray dust coating their windows was gross, inhaling the gray dust in the city's air could be deadly.

"This power plant has got some serious issues," he said. "The pollution coming from its smoke stacks is affecting Alexandria, and it's affecting the region."

Several of the region's elected officials are starting to take a stand against local coal-burning power plants, introducing legislation in both Virginia and Maryland that would require the plants to dramatically reduce their dangerous emissions.

THE POTOMAC RIVER Generating Station is one of two coal-fired power plants in the region. The other plant is located further up the Potomac River in Dickerson, Md., a rural area in Montgomery County, Md., just across the river from Loudoun County.

Both plants are operated by Mirant, an Atlanta-based energy generation company. Neither produces power for any Virginia residents, but both are considered among the region's biggest polluters.

"The Dickerson plant is the biggest source of pollution in Montgomery County by far," said George Leventhal (D-at large), a member of Montgomery County Council.

"This one plant creates more pollution than all the registered cars and trucks in the county combined. That's more than 600,000 vehicles."

More than 250 deaths — including 60 in Maryland and 40 in Northern Virginia — can be directly attributed each year to the region's coal-burning power plants, according to a 2002 analysis conducted by researchers at Harvard University.

"For the region, this is a truly serious health concern," said Ana Prados, an air quality expert from the Sierra Club who lives in Springfield. "They're not doing nearly enough to protect people."

In the last five years, no other facility in Northern Virginia or Montgomery County was cited for more consecutive Clean Air Act violations than the two local coal-burning power plants, according to federal Environmental Protection Agency records.

During 2003, smoke stacks at the two plants pumped roughly 75,500 tons of sulfur dioxide, 11,200 tons of nitrogen oxide, 600 tons of carbon monoxide and 73 tons of volatile organic compounds into the region's environment, according to state environmental agencies.

These pollutants are direct contributors to acid rain, global warming, regional smog, and deterioration in water quality, and can cause trees, lakes and streams to become dangerously acidic.

IN HUMANS, coal-burning power plant emissions can lead to respiratory illness, aggravate heart and lung disease, cause eye irritation and decrease lung capacity. Decreased lung function may be accompanied by coughing, nausea, chest pain and pulmonary congestion, according to the EPA.

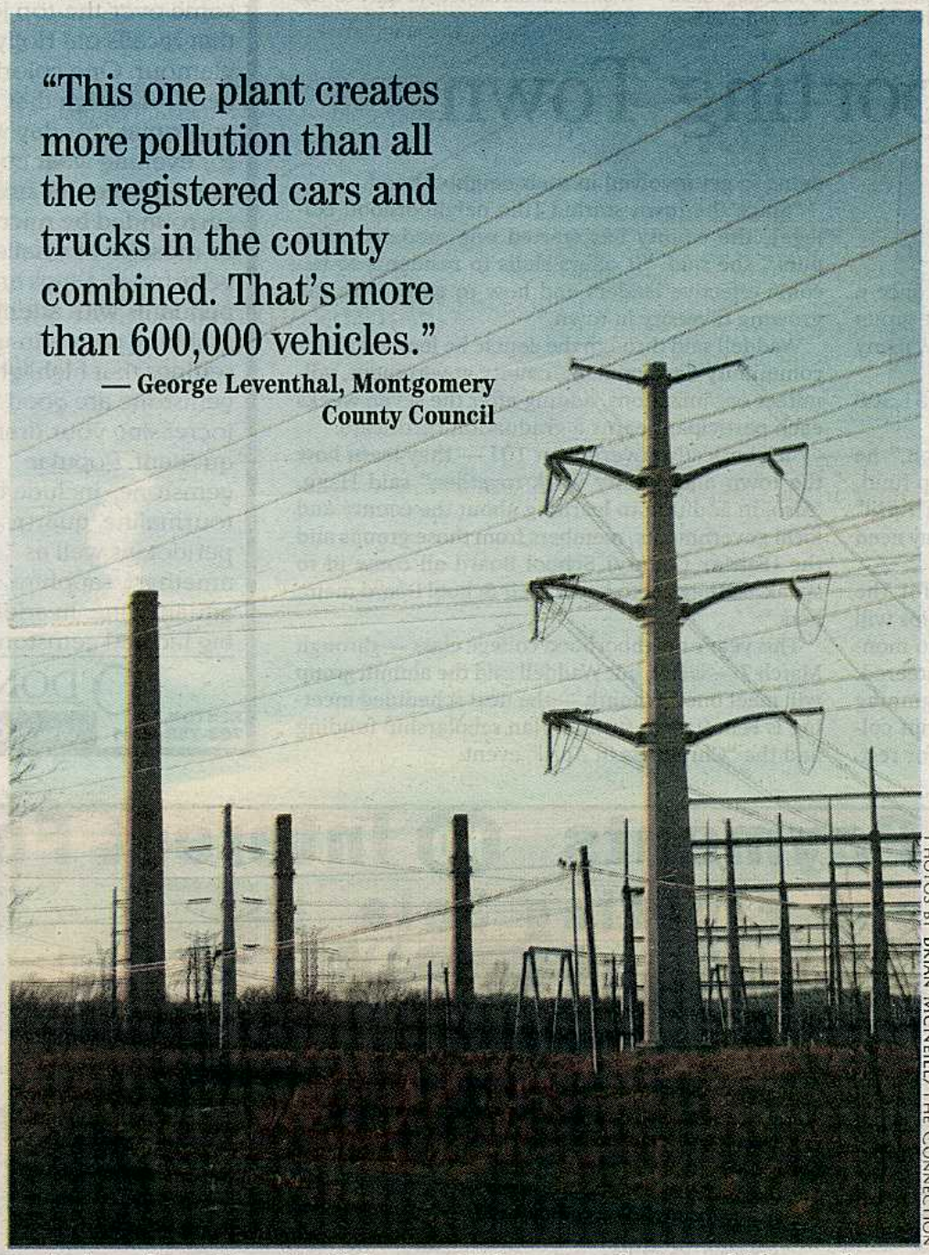
Senior citizens, infants and children — particularly those with asthma —are especially susceptible to the harmful effects of power plant emissions.

Coal-fired power plants are also the biggest single contributor of airborne mercury pollution. A new nation-wide study by researchers at the University of North Carolina found that many women of child-bearing age had dangerously high levels of mercury in their system, worrisome for developing fetuses. Mercury has been found to cause brain disorders in fetuses and young children.

The Old Town Alexandria plant alone emitted at least 72 pounds of mercury into the air in 2003, according to the Virginia Department of Environmental Quality.

MIRANT SPOKESMAN Steven Arabia said the company is taking steps to reduce nitrogen oxide emissions from its coal-burning plants in the region by 65 percent over the next six years.

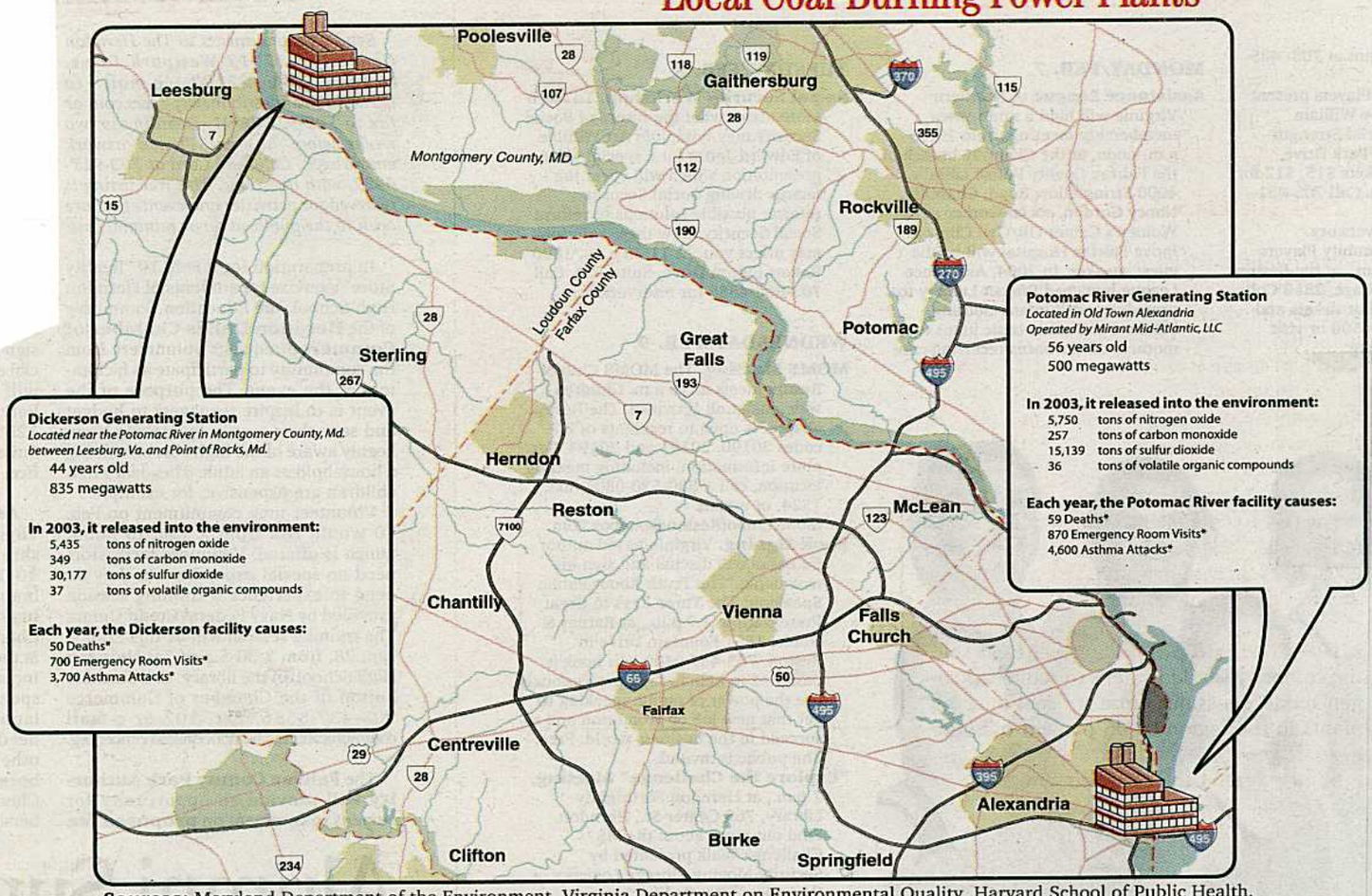
Mirant agreed to reduce its emissions as



Photos by Brian McNeill/The Connection

Emissions from Mirant's Dickerson, Md. power plant would be made cleaner under proposed state legislation.

Local Coal-Burning Power Plants



Sources: Maryland Department of the Environment, Virginia Department on Environmental Quality, Harvard School of Public Health.

** This data was calculated in a 2002 study by researchers at the Harvard School of Public Health using computer mapping technology, census data, health statistics and coal-burning power plant emissions information.*

part of an agreement with federal and state environmental agencies after it was found in 2003 to be emitting more than 1,000 tons over the legal limit of nitrogen oxide.

"Air quality is a regional issue," Arabia said. "This agreement will require us to have a region-wide reduction in NOx."

By reducing nitrogen oxide emissions from Mirant's smoke stacks, other pollutants will also be reduced, Arabia said. The "scrubbing" technology that cleans up the emissions before they leave the power plant will also clean up other harmful substances.

Local coal-burning power plants are only one piece of the region's air quality problems, said Arabia. Cars, trucks, boats, machinery and power plants in other states are also contributors.

The EPA says the Washington, D.C. region has poor air quality, with Alexandria, Fairfax, Loudoun, Arlington and Montgomery all specifically listed as having unhealthful air. Local health department officials in each community said air quality is improving and is

"It would be a nightmare," Arabia said.

BUT SOME STATE and local elected officials are saying Mirant's efforts to reduce nitrogen oxide do not go far enough.

"There's a general and reasonable concern by citizens that this is horrible for their health," said Del. Brian Moran (D-Alexandria).

Moran has introduced a bill in the General Assembly that would require Mirant to reduce its total emissions even further.

In Maryland, Del. James W. Hubbard (D-Prince George's) has introduced a bill that would make Maryland power plants install equipment that would reduce total emissions by 90 percent over the next eight years. Montgomery County's government considers tighter pollution controls on coal-burning power plants to be its top legislative priority.

Despite Mirant's existing efforts region-wide, there may be little reduction of emissions at its Alexandria and Dickerson plants, both of which have been operating for more than four decades; both plants are exempt

Coal-burning power plants cause 40 deaths in Northern Virginia, 60 deaths in Maryland each year.

much healthier than it was 10 years ago.

Arabia said Mirant would agree to more regulation, but only if it comes from the federal government and includes coal-burning power plants across the country. If state legislation requires Mirant to install expensive equipment to reduce emissions, it would put the company at a competetive disadvantage with energy providers in other parts of the nation.

from modern pollution control laws.

Under the agreement, Mirant can cut emissions at other plants, while leaving the two older plants largely untouched.

"We're not satisfied," said William Skrabak, Alexandria's environmental quality director. "The city's position is that we won't be satisfied until that plant is shut down."

Fairfax County has also been lobbying for tighter federal and state controls on local

Coal-Burning Power Plant Emissions

Nitrogen Oxide (NOx)

Nitrogen oxide is the generic term for a group of highly reactive gases, most of which are colorless and odorless. The primary manmade sources of NOx are motor vehicles and electric utilities, including coal-burning power plants.

NOx is one of the main ingredients in ground-level ozone, which can cause respiratory problems, damage to lung tissue, emphysema, bronchitis and premature death.

The gas contributes to the formation of acid rain and nutrient overload that deteriorates water quality and global warming.

Carbon Monoxide (CO)

Carbon monoxide is a colorless, odorless gas that is formed when carbon in fuel is not burned completely.

It is poisonous even to healthy people in areas with elevated levels. It can lead to central nervous system damage, vision problems, a reduced ability to work or learn, reduced manual dexterity and difficulty performing complex tasks. People with heart disease are particularly at risk.

Sulfur Dioxide (SO2)

Sulfur dioxide is prevalent in crude oil, coal and metallic ore. It forms when fuel containing sulfur — such as coal — is burned. More than 65 percent of the nation's sulfur dioxide pollution comes from electric utilities.

Sulfur dioxide contributes to respiratory illness, particularly in children and the elderly, and aggravates existing heart and lung diseases. People with asthma are especially affected by breathing in the gas.

Sulfur dioxide also contributes to acid rain, plant and water deterioration and aesthetic damage to buildings and monuments.

Volatile Organic Compounds

When natural fuel is burned, it releases in a gaseous state the volatile organic compounds contained in the fuel. While VOCs are released by industrial facilities, it is also found in many common household cleaning supplies.

VOCs can lead to conjunctival irritation, nose and throat discomfort, headache, allergic skin reaction, decline in nerve transmission, nausea, fatigue and dizziness. When coupled with NOx, volatile organic compounds can create smog — which can lead to eye irritation and a decrease in lung function in healthy individuals.

Mercury (Hg)

Mercury is a naturally occurring neurotoxin found in the earth's crust, air and water. Coal-fired power plants contribute to 41 percent of the nation's mercury pollution.

As mercury leaves power plant smoke stacks, it falls into lakes and streams, polluting the water and aquatic life, including fish. Fish consumption leads to elevated levels of mercury in humans.

Unsafe levels of mercury can lead to brain development problems and damage to the central nervous system in fetuses and young children.

Source: *Environmental Protection Agency, Fairfax County Health Department*

coal-burning power plants.

"Trying to comply with clean air laws is challenging enough," said Sharon Bulova (D-Braddock), of the Fairfax County Board of Supervisors. "These plants cause us to not comply. We're doing what we can, but we need help."

Loudoun County Health Director David Goodfriend said he has not heard many complaints about asthma, respiratory illness and breathing trouble, but he also said most Loudoun residents are unaware there is a coal-fired power plant just across the Potomac River.

IF MORE STATE regulation is approved, Mirant would be forced to install equipment costing so much the plants would probably have to close, Arabia said.

"These regulations would cost hundreds of millions of dollars to comply with," he said. "Already, emissions from our plants have gotten cleaner and cleaner over the years. And they'll continue to get cleaner. That's a fact."

Hundreds of millions of dollars is a small price to pay to save lives and keep the environment free from toxins, Moran said.

"We have to ensure that our community's air and water are clean," he said. "That's good for the environment and that's good for the public."

Cleaning up the region's coal-burning power plants, including the Alexandria and Dickerson plants, could save as many as 270 lives each year, according to a 2002 Harvard study.

Coal-burning power plants in Northern Virginia and Southern Maryland affect the region's environment and public health.